

Abstract of the Disclosure

The present invention provides an electrical power supply system for an automotive vehicle with high reliability and small size in which an adequate power is supplied to both a high power load like a blower motor and a conventional load like a battery by using a conventional alternator.

The power supply system for the automotive vehicle comprises: an alternator with an armature winding and a field coil, a stepping-up DC/DC converter for applying a stepped up voltage of a battery to the field coil, a regulator for controlling an output voltage of the alternator by changing the output voltage in response to a rotating speed for supplying a power to the high power load, and for controlling the output voltage to be a charging voltage of the battery.